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FASTENER TAPE

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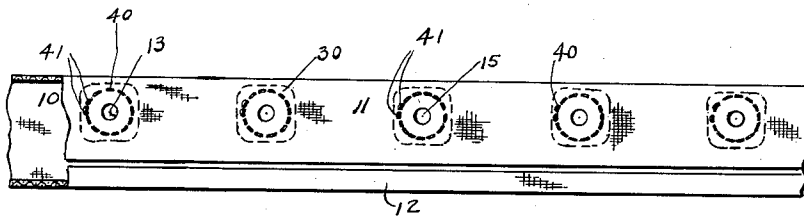
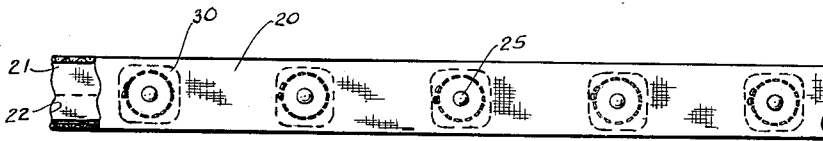
**FIG. 1**

FIG. 2

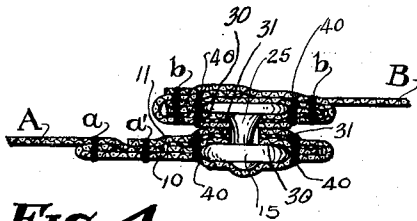


FIG. 4

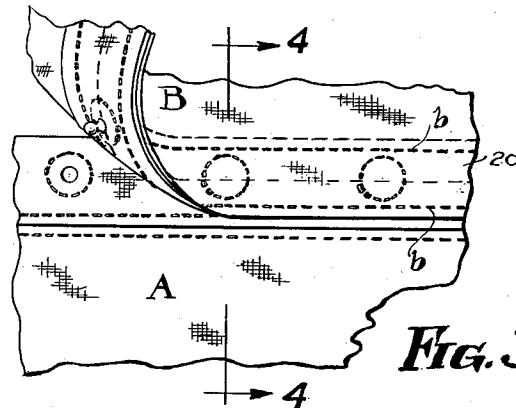


Fig. 3

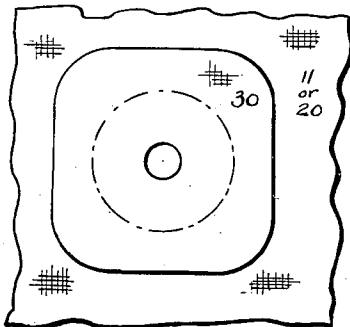


FIG. 6

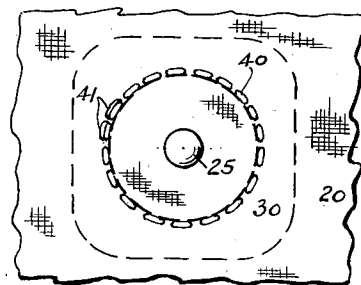


Fig.5

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FASTENER TAPE

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9 Claims. (Cl. 2-265)

This invention relates to strips of fastener members adapted to be attached to ladies' garments to serve as closures therefor. The strips may be made in pairs, each carrying a row of fastener members of a character adapted to engage the fastener member of the other strip, so that it is only necessary to sew the respective strips to the two portions of the garment which it is desired to secure together.

One of the objects of the invention is to provide such a fastener strip in a form in which the fasteners are so held that they are padded on each side by the fabric of the strip, whereby injury to the garment is avoided. Another object is to provide for effectively holding the fastener in fixed position in the strip so that it cannot become displaced or out of registration with its mate. Still another object is to strengthen the fabric of the strip at the fasteners, where the greatest wear occurs, and at the same time allow the desirable flexibility to the strip.

In accomplishing the above objects, I secure to the inner face of a folded fabric strip, a series of reinforcing members, one for each fastener member; and, after the fastener member has been placed in registration with such reinforcing member, I pass an annular row of threads through both plies of the strip and through this reinforcing member immediately about the periphery of the fastener member. In the case of the stud member, the stud extends through an opening through the reinforce and the surmounting strip layer. In the case of the socket member, the socket opening stands directly behind an opening made through the reinforce and surmounting layer.

It is particularly important, in the case of the socket members, that there be no shifting of the fastener member with reference to the strip; otherwise, the hole through the strip might not be in registration with the socket. It is also important that the fastener members do not pull or unduly wear the strip or tear it, and all of these results are accomplished by my reinforcing patches.

To lock the end threads of the annular row of stitching so that they will not be able to ravel, I continue such stitching for more than a complete circumference so that the stitch, at each end, where the thread enters or leaves, is necessarily lapped onto another stitch and thereby locked. The effect may be accomplished by making the second course of stitching of only a few stitches or by making it completely annular.

My invention is illustrated in the drawing hereof and is hereinafter more fully described. In

the drawing, Figure 1 is a plan, partly broken away, of a strip carrying socket members of snap fasteners, and Figure 2 is a plan, partly broken away, of the cooperating strip carrying stud members. Figure 3 is an illustration of the two strips attached to garment members, a portion of these strips being snapped together. Figure 4 is an exaggerated cross section to the two strips attached to the respective garment portions, the plane of the section being indicated by the line 4-4 on Figure 3. Figure 5 is a face view of a portion of the strip carrying the stud members. Figure 6 is an interior view of either of the strips before the fastener member is applied, the position of the fastener member being indicated by a broken line.

The tape, carrying the socket members, may be of the form shown in Figure 1, having an intermediate zone 10 and two extreme zones 11 and 12 folded on the intermediate zone. In this instance, one of the extreme zones is materially wider than the other and this wider zone 11 carries, on its inner face, the socket members of the snap fasteners and the reinforces therefor. The other tape member, shown in Figure 2, has the extreme zones 21 and 22 of the same width folded onto the intermediate zone 20, and the intermediate zone carries the reinforces and stud members of the fasteners. In either case, there is definitely secured to the inner face of one of the zones of the tape a series of equidistant reinforcing patches 30, and holes are made through the center of the patch and through the overlying fabric zone.

In Figure 1 the socket members 15 are placed within the tape and are located directly behind the openings 13 and are secured in place by annular rows of stitches 40, passing through the fabric ply 11 and the reinforcing patch 30 and the fabric zone 10 and snugly embracing the fastener. In the case of the stud members, these studs 25 occupy openings (positioned the same as the openings 13) through the patches and the zone 20 of the tape. This member is likewise held in place by annular stitching snugly embracing the fastener member and passing through the intermediate zone 20, the reinforces and two extreme zones 21 and 22 of the tape. In each case, the last two stitches 41 of the annular row are shown as overlapping the first two stitches to lock the thread, though, as heretofore stated, this second row may be continued to make a complete circle, if desired.

With each tape, the opening, whether left as an opening for the socket or occupied by the stud, is

effectively reenforced by the internal patch so there is no chance of the fabric in this region stretching or tearing.

I have found it very effective to make the internal patches of pieces of fabric surmounting a thin layer of gutta-percha 31 (Fig. 4) which is heated sufficiently to cause it to effectively adhere to the fabric on both sides thereof and impregnate such fabrics and toughen them in the region adjacent the fastener. The annular row of stitching snugly embraces the fastener; in fact, is as close to the fastener as it is possible to bring the threads with a sewing machine. This results in the fabric being stretched on each side by the sewing operation across the fastener, and the fastener is thus confined in a fixed position and cannot shift in any direction.

Figures 3 and 4 indicate my fastener tape attached to garment members, the socket fastener tape being shown as sewed to garment portion A and the stud tape to the garment portion B. In applying the fastener strips in the form shown, the stud strip is sewed to the outer face of the inner flap B of the garment by two longitudinal rows of stitches *b*. The socket tape, on the other hand, preferably embraces the edge portion of the other garment flap and is sewed to it by a row of stitches *a*, which passes through the zones 10 and 12 and through the garment and by a second row of stitches *a'* which passes through the fabric zone 10, then through the edge portion of the fabric A and then through the edge of the wide zone 11 of the tape. This leaves the intermediate zone 10 of the tape forming an exposed facing for the garment.

My fastener tapes are economically constructed. They hold the fasteners securely in place, all equidistant from each other, and at the same time the tape is so flexible as not to interfere at all with the proper curvature or flexing of the garment, so that it is well adapted for use with the most delicate fabrics. Moreover, by employing the isolated reenforcing patches, I may use lighter and more flexible material for the tape than if only the tape fabric were relied on to retain the fastener.

The fastener tapes of this invention are used primarily for fastening garments, the respective strips of the tape being sewed to the garment at the two edges to be secured together. It results, therefore, in use that the strain on the fastener tape is transverse of the tape and tends to pull the fasteners sidewise toward the extreme edge of the tape. With my fastener tape, this stress is resisted by the semi-circular course of stitches which lies along the outer half of the fastener and distributes the stress to a considerable region of the tape. Another effect of the lateral tension of the garment on the tape is a tendency of the fasteners to tip away from the plane of the tape, swinging about that portion of the fastener nearest the garment edge, as a center; that is to say, the pull of the garment tends to tip the fastener into a position at an angle to the face of the tape, the vertex of the angle being adjacent the edge of the garment. Now, the semi-circular stitching around the inner half of the fastener acts to resist this tipping of the fastener.

It will be seen therefore, that the outer half and the inner half of the circular stitching each perform functions in addition to the function of the completely annular course of stitching in forming a snug pocket. This completely annular row of stitching close against the edge of the

fastener, with each of the end stitches interlocking with another stitch, above it or beneath it, effectively and permanently positions the fastener and resists all of the forces acting on it, so that it does not become displaced by strain on the tape, frequent washings or long wear of the garment. The whole construction is neat in appearance, and is readily applied to the garment.

It is to be understood that the particular longitudinal folding of the tapes may be varied from that shown, though the narrow folding for the stud members and the wider folding for the socket members has been found very satisfactory in practice. It will be understood, also, that in Figure 3 the fabrics are greatly exaggerated in thickness for the purpose of illustration and that, in practice, the two tapes lie very closely against the respective garment portions.

I claim:

1. A fastener tape having two surmounting plies of fabric reinforced at regular intervals, on the inner face of one ply, and snap fastener members carried between the plies at the reinforces, the reinforces extending over one face of the fastener member.

2. The combination, with a garment having portions to be fastened together, of a pair of cooperating fastener strips carrying stud and socket fasteners and secured respectively to said portions, each strip having reinforcing patches arranged at regular intervals thereon and each extending across the face of the corresponding fastener, the stud members projecting through some of such patches and the strip carrying them, and the socket members lying behind holes through others of the patches and the strip carrying them.

3. A fastener strip comprising a flexible tape doubled on itself on a longitudinal fold, a series of patches located at equal intervals along the inner face of one ply of the tape, and fastener members between the folds of the tape and behind the reinforcing patch, said fastener members having sockets lying behind openings in the patch and tape.

4. A fastener tape comprising two plies of fabric, snap fastener socket-members lying between the plies, the ply over the members being reinforced across the face of the members, each of the socket members being held in place with its socket in registration with openings through the overlying reinforcement and ply by means of stitching securing the plies together and snugly embracing the socket member.

5. A fastener tape having two surmounting plies of fabric one of which is reinforced at regular intervals, snap fastener members between the plies at the reinforces, the reinforce extending across the fastener, and annular courses of stitching through both plies and the intermediate reinforce snugly embracing the respective fastener members.

6. A fastening device comprising two strips adapted to be sewed independently to portions of a garment to be fastened, each strip comprising two plies of fabric and a row of snap fasteners of the stud and socket type, lying between the plies, there being a series of adhesive patches secured at equal intervals to the inner faces of the plies, overlying the fasteners, the studs of the stud members projecting through the patches and overlying ply and the sockets of the socket members being behind holes through the patches and overlying ply, and an annular course of stitches passing through both plies and

the intermediate patch of a strip and snugly embracing the fastener between such plies.

- 5 7. A fastening strip comprising two plies of fabric and a row of snap fasteners lying at equal intervals between the plies, there being openings through one of the plies registering with the successive fasteners and there being annular sets of stitches passing through both plies and snugly embracing the respective fasteners.
- 10 8. A fastening device comprising a strip of fabric folded upon itself at each edge to provide an intermediate zone and two extreme zones, a row of snap fastener socket members lying between the intermediate zone and one of the extreme zones, and centralized with openings in
- 15 one of said zones, and individual annular courses of stitching snugly surrounding the respective

fasteners and securing together a ply of fabric beneath the body of the fastener and a ply above the body of the fastener and drawing both plies taut across the fastener, to maintain the openings in the fabric in registration with the sockets. 5

9. A fastener strip comprising two plies of fabric, one behind the other, fastener members arranged at intervals between the plies, there being holes through one of the plies registering with the centers of the fastener members, and 10 annular rows of stitching snugly embracing the respective fastener members and joining the two plies of fabric, each row of stitches making more than a complete annulus about the fastener to lock the ends of the thread. 15

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